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Reimagining Health Systems for Better Health: Strategic Recommendations for Strengthening Health Workforce in Botswana – A Qualitative Study

Naledi Moipone Mlaudzi[1*], Sonika Raj Goel[1], Dintle S. Molosiwa[2]
[1]*School of Public Health, Texila American University, Guyana*
[2]*University of Botswana, Faculty of Medicine, Department of Family Medicine and Public Health and Medicine, Gaborone, Botswana*

Abstract

The global shortage of healthcare workers, particularly in low-and middle income countries, poses a significant challenge to achieving Universal Health Coverage (UHC) and the Sustainable Development Goals (SDGs). This study aimed to explore stakeholder's perspectives on the underlying factors contributing to the shortage of healthcare workers and to identify actionable strategies for addressing these challenges. In depth interviews were conducted with 38 key informants guided by the World Health Organization's Global Strategy on Human Resource for Health: Workforce 2030. Thematic analysis revealed several underlying issues, including the absence of reliable human resource data to inform planning, skills mismatches; ineffective recruitment and retention strategies, limited career progression, poor staff motivation, internal and external migration and frequent leadership turnover.Stakeholders proposed recommendatins such as, flexible staffing models(e.g. short-term contracts)the use of workload indicators to guide staffing decisions, the development and utilization of robust human resource information system, and the implementation of context training programs and mentorship programs delivered on-site. Additionally, stakeholders emphised the importance of improving workplace conditions, enhancing proffesional development opportunities, and strengthening staff motivation to reduce burnout and improve retention, particularly in underserved areas. The findings highlight the need for integrated, data driven, contextual relevant approaches to human resource planning and development.

Keywords: *Human Resource for Health, Policy Implementation, Stakeholder Engagement, Workforce Planning and Development.*

Introduction

As countries strive to achieve the World Health Organization Global strategy on human resources for health: Workforce 2030, the healthcare sector's escalating crisis marked by a critical shortage of health workers. The World Health Organization (WHO) Global strategy on human resource for health: Workforce 2030 provides a comprehensive framework to guide global and national efforts in addressing health workforce shortages and maldistribution. It emphasizes cross-sectoral policy coherence, particularly among the education, migration, labour, and health sectors, and advocates for a systems-based approach to health workforce development [1]. WHO projects a shortfall of 10 million healthcare workers by 2030, a notable increase from the estimated decifit of 7 million deficit a decade earlier [1]. This shortage spans a broad range of healthcare professionals, including physicians, nurses, midwives and allied health workers. The root causes are multifaceted, including insufficient training capacity, inadequate financial and non-

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****Corresponding Author: nmmlaudzi@gmail.com***

financial incentives, and weak retention strategies [1]. Low- and middle-income countries (LMICs), particularly those in sub-Saharan African are dispropriately affected. WHO 2023 reports that Sub-Saharan Africa alone faces a shortage of 2.4 million doctors and nurses, while South-East Asia and Africa experience combined deficits of 6.9 million and 4.2 million healthcare workers, respectively [2].

Despite growing concern, over skills mismatches, effective health workforce planning remains constrained by insufficient or fragmented data. Ikhurionan et al [3]emphasizes that the discrepancy between perceived shortages and actual workforce data hinders evidence based decision making. In Botswana, these challenges are particularly acute. The country faces an array of issues including unreliable Human Resource for Health (HRH) data, skills mismatch, poor working conditions, limited retention strategies, fragmented health information systems, internal and external migration of health professionals. Rural urban disparities further overburden the worker force and compromise healthcare delivery[1, 4]. These challenges not only threaten threaten national health outcomes but hinder socio economic development. Innovations such as telemedicine, digital health education, and artificial intelligence offer promising avenues for addressing workforce shortages, especially in underserved areas [5].

For countries like Botswana, a bold and integrated approach is necessary, one that prioritizes public-private partnerships, strengthens international collaboration, and promotes the scalable of digital solutions. This study aims to explore stakeholder's perspectives on the underlying factors contributing to Botswana healthcare workforce shortages to identify actionable recommendations to address these challenges effectively.

Methods

Study Design

A cross-sectional qualitative study was conducted within Botswana's, Ministry of Health (MoH) to gain an insight into the current experiences and perspective of key stakeholders regarding the Human Resource for Health (HRH) landscape from different relevant sectors. The cross sectional design enabled the researcher to explore these perspectives at a single point in time, without the need for longitudinal follow-up. Data were collected through the key informat interviews with stakeholders across multiple sections relevant to HRH policy implementation.

Study Setting

The study was conducted in Botswana, with particpants recruited from both national and sub-national levels of the health system. Interviews were conducted with individuals who are actively engaged in HRH functions within government institutions, developing partner organisations, and the private health sector.

Study Population and Sampling

The study targeted a diverse group of policy makers with varying responsibilities related to HRH. A total of 38 key informants participated, including policy makers, program managers, senior executives, focal persons within the Ministry of Health, as well as representatives from development partners, other government ministries and private institutions involved in healthcare education and service delivery. Purposive sampling was employed to ensure the inclusion of individuals with direct roles in HRH planning, administration, training, distribution, and other relevant functions. Eligibility criteria included current employment within the MoH, or affiliated sectors and active involvement in HRH policy, planning or implementation.

Data Collection

Data were collected though face-to-fac,e in-depth interviews lasting approximately 40 to 60 minutes. Interviews were conducted at particpants' workplaces to ensure convenience and maintain confidentiality. This setting also also fostered openness, allowing informants to speak freely about sensitive issues related to HRH. An interview guide was used to steer the conversation, featuring open-ended questions aligned with the objectives of the WHO's Global Strategy on HRH: Workforce 2030. All interviews were audio recorded with the particpants' consent to ensure accuracy and support comprehensive thematic analysis. The face-to-face format facilitated interactive dialogue, enabling the interviewer to probe deeper into responses to capture nuanced perspectives. Prior to the interviews, particpants were informed about the purpose of the study, the voluntary nature of their involvement and the confidentiality of their responses. Written consent was obtained from all informants before the commencement of the interviews.

Data Collection Procedures

The lead researcher identified and contacted potential informants and coordinated with trained research assistants to arrange and conduct the interviews. Research assistants received training on qualitative interviewing techniques and were briefed on the study obejctives, ethical considerations and detailed procedures for obtaining informed consent Each interview was conducted face to face, with both the researcher and research assistants ensuring a consistent and ethical approach throughout the data collection process.

Data Analysis

All audio-recorded interviews were transcribed verbatim by the lead researcher, with the support of the two trained research assistants. Transcripts were carefully reviewed to ensure accuracy and completeness. Thematic analysis was employed to interprete the data. This involved , an initial through reading of the transcripts, during which preliminary notes and patterns were documented. Open coding was then applied to identify recurring concepts, which were grouped into broader thematic categories. To support thematic analysis, ATLAS.ti. (Version 9) software was utilized. The software facilitated the identification, coding, catergorization, of themes across All scripts, ensuring consistency and depth in interpretation. Additionally, the process included regular consultation and collaborative discussions with the co-authors, who also served as the study's academic supervisors to enhance analyitical rigor and credibility.

Ethical Considerations

Ethical clearance of the study was obtained from the Ministry of Health in Botswana and the Institution Review Borad (IRB) of Texila American University. A research permit was granted prior data collection. Written informed consent was obtained from each informant prior the conduction of the interviews, ensuring compliance with ethical standards regarding confidentiality and particpants' rights.

Findings

A total of 38 Key informants participated in the study. The majority (84%) were affiliated with the MOH, while 3% represented the Human Resource Development Council (HRDC) and the remaining (13%) were drawn from various other organizations relevant to health workforce development. Interms of gender distribution, over half of the participants (55%) were females. Rgarding educational background, a significant proportion (68%) of the informants held a master's degree. Additionally, the majority (58%) reported having more than 20 years of professional experience, indicating a higher level of expertise and familiarity with the HRH landscape in Botswana (Table 1).

Table 1. Study Participants Demographics

Variables	f	%
Organization type		
MOHW	32	84
Regulatory Body (Health Professionals)	2	5
Academic institutions	3	8
HRDC	1	3
Partners	1	3
Type of Organization		
Government	33	87
Private	1	3
Parastatal	3	7
Multilateral	1	3
Gender		
Males	17	45
Females	21	55
Age groups		
18 – 25	0	0
26 – 35	5	13
36 – 45	13	34

Health Workforce in Botswana

Thematic analysis of the interviews revealed several recurring issues contributing to the shortage of healthcare workers in Botswana (Table 2). These include the lack of reliable human resource data which hamperes effective planning and development; a persistent mismatch between valuable skills and health system needs; inadequate recruitment and retention strategies. Additionally, low staff motivation and limited opportunies for career progression were identified as key drivers for both internal and external migration of healthcare workers. Frequent changes of staff including executives further disrupts continuity and weaken the implementation of human resource strategies. These challenges collectively undermine efforts to build a resilient and sustainable workforce.

Table 2. Areas of Inquiry and Emerging Themes

Area of Inquary	Emerging Themes
Lack of HR data	• HR information systems not updated, incomplete and not reliable • HR decision making not based on data/evidence • No strategy to inform decision and activities
Poor skills match	• Lack of speciality training for doctors, nurse and allied health professionals

	• Ineffective strategies for training selection • Shortage of manpower • Poor distribution of available healthcare workers
Inefficient recruitment and retention strategies	• Extended vacancies • Poor working conditions • Employee welfare, unresolved grieviances
Lack of motivation and progression	• Internal and external migration for greener pastures
Frequent leadership change	• Lack of continuity of plans • Frenquent changes and decisions

Lack of HR Data

The findings highlight significant deficiencies in Botswana's Human Resource Information System (HRIS). The data is often incomplete therefore unreliable. Concerns raised by participant were that human resource information systems were fragmented. Moreover, there is a notable lack of comprehensive, evidence-based reports and plans, highlighting the limited use of data-driven decision-making. Additionally, this fragmentation promotes a siloed approach to addressing HRH issues, undermining coordination.

Gaps in HRH Data, Strategy and Implementation

Participants further indicated the absence of a centralized repository of healthcare workforce data, including training and specialization records. This limits the ability to assess workforce needs accurately and to align training with service demands. The lack of data driven work force planning contributes to inefficiencies in recruitment, deployment and retention strategies. These challenges were attributed to several factors, included limited financial resources, inadequate staffing for HRIS management and inconsistent reporting from health facilities. The collective results is a weakend capacity to generate evidence informed HRH policies and long term strategic plans.

As **Participants 10** noted : *"there is lack of funds, shortage of staff and fragmented health information from facilities, that also contribute to none implementation of available plans.*

Participants also raised significant concerns about the absence of a coherent and upto date HRH strategy to guide workforce development and planning. Many that ended in 2016 were unaware of any such a strategy to guide workforce development and planning. Many were unaware of any strategy, while others reported that the previous strategy which ended in 2016 was never fully implemented or evaluated.

Participant 1 observed: "*We don't have, like for instance, it's my first time to hear about the HR planning but looking at what is happening here, do we have a consistent training plan in the ministry? The answer is no, our hospitals or facilities, do they have a training plan? I think the answer is no. If it's there, do they follow it?*" similarly, other participants expressed uncertainty or lack of access to the strategy:

Participant 5: "*the* strategy is available but obsolete/ outdated"

Participant 6: *"I don't know "* when asked if there is any HRH strategy

Participant 7: stated that *"I have never seen it"*.

Participants also emphasized that the lack of strategy dissemination, and inadequate monitoring and evaluation mechanisms made it difficult to track HRH progress or targeted intervensions. The absence of structured training plans and misalignment between training and actual workforce needs were also highlighted. These limitations were seen as barriers to building a resilient and well distributed health workforce, particularly in underserved areas.

Skills Mismatch, Training Gaps and Workforce Training Gaps

The findings revelead significant concerns regarding skills mismatch between the available health workforce skills and actual needs of the health system. Particpants attributed this primarily to the absence of a comprehensive human resource skills inventory and weak HRH information systems, which make it difficult to track, assess, plan for workforce capacity effectively.

Participant 18 emphasised the importance of conducting a national level skills audit stating *"the ministry should conduct a skills audit to identify which cadres record a higher shortage than others then use the results of the audit to inform the training plan"*.

A reccuring theme among particpants was the lack of specialized training opotunities for doctors, nurses and allied health professionals. Several participants noted that training programs had stalled over time, exacerbating the shortage of skilled proffessionals in key areas. **Participant 18** further explained: "*Training is a challenge in the local allied personnel they are few who are trained even when you advertise they will not be available to fill the posts e.g. therea was an advert for occupational therapists and no single person applied since there are not available it ended up attracting personnel outside the country*".

The discontinuation of specialist nusing programs was highlighted as one of the major problem affecting shortage of skills and service delivery.

As **Participant 5** noted: "*there has been a decline in the number of specialists, the nurses that are being produced. From GIHS, and I'm not sure how familiar you are in terms of health, we used to have anesthetic nursing in Gaborone Institute of Health Sciences (GIHS). The program was stopped around 2013, 2014. We used to have community health nurses. We used to have mental health nurses. Family Nurse Practitioners (FNPs). We had anesthesia, community health, and ophthalmology programmes. These three have been stopped. So that means there has been a regression from that area"*.

Additionally, **Participant 9** highlighted the importance of developing nurse specialist roles to support medical specialists and improved team based care: "*as much as we have the different medical specialists, we should have different nurse specialists because they will be able to work together hand in hand without necessarily just taking instructions. This nurse can do something even before the arrival of this doctor. I think as we plan for these people we must look at who is going to work in this field*"

These insights underscore the urgent need for better workforce planning tools, targeted training programs and strategies to ensure alignment between training outputs and the evolving healthcare demands in Botswana. Despite these gaps, participants acknowledged that the ministry is currently training healthcare personnel both locally and abroad.

Participant 5: "*I think this will be the largest number graduating, even from outside, that will be about 38 specialists. From next year, there will be close to 50 specialists graduating. The majority of those from University of Botswana (UB), but if you add others from other countries, it will go to 50"*.

Participant 5 further mentioned that "*there has been a decline in the number of specialists,*

the nurses that are being produced. From GIHS, and I'm not sure how familiar you are in terms of health, we used to have anesthetic nursing in GIHS. The program was stopped around 2013, 2014. We used to have community health nurses. We used to have mental health nurses. FNPs. We have anesthesia, community health, and ophthalmology. These three have been stopped. So that means there has been a regression from that area".

However, training efforts were viewed as uncoordinated and data blind. Several particpants noted that there was no formal training plan, and that training decisions were made in silos.

Participant 20: "*from our side, we need one, two, to send four people for this, or we need this year's. But I will say what I say from my unit, somebody else from their unit, and there is no coordination where you can probably harmonize your thoughts*".

Parrticipant 1: " *We don't have, like for instance, it's my first time to hear about the HR planning but looking at what is happening here, do we have a consistent training plan in the ministry? The answer is no, our hospitals or facilities, do they have a training plan? I think the answer is no. If it's there, do they follow it".*

Participant 5 : "*the strategy is available but obsolete/ outdated".*

There were concerns about workforce distribution particularly the disconnect between HR administration and HRH planning. . Particiants described a lack of coordination that has lead inequitable staffing across facilities, with some institutions being severely understsffed.

Participant 19: "*I think currently there is a misunderstanding between HRH and HR administration. We need to be working together but if HRH is here with policy and planning, and then you have HR who are hiring and distributing personnel there without being informed by us, then whatever we are doing here is just for the group*".

The issue of career progression after training was another area of frustration. Participants explained that even after completing specialized training, staff often return to the same posts with no opportunity for promotion or advancement.

Participant 4: *"If you don't have posts, how are you going to fill up vacancies or fill up facilities anywhere? Most people, when they come back, they resume their duty where they were before going for training. And then some are disgruntled, obviously, because after training, you expect your life to change or to improve. Some people have come back after training and have been in that position for the past 10 years". This may lead to em*ployees becoming disgruntled".

The lack of established posts, limited opportunities for progression, and delayed or absent promotions were cited as key demotivators or factors contributing to both low morale and workforce attrition.

A reccuring theme among participants was the deficiency of recruitment and retention strategies, which has significantly affected the health workforce landscape in Botswana. Many health proffessionals, particularly nurses and specialists, are migrating in search for better opportunities, both locally and internationally. Particpants consistently emphasized the urgent need for robust, well implemented retention stratergies to address this persistent challenge.

Participant 16: "*we need a retention strategy. Without one, we are doomed. So we don't have. We will train, they will leave for greener pastures. And that is our biggest challenge".*

Despite some existing incentives, they were widely viewed as insufficient and unattractive, particularly when compared to opportunities abroad. Vacancies often remain unfilled due to either lack of suitable candidates or unattractive terms of employment.

Participant 19: "*we train people who are supposed to be specialists, who are supposed to be experts, and then naturally leave. This A A*

specialists are so important. Nurses and doctors, you'll find that they move".

Participant 20: *"when you have the best specialists living, you are then going to have a problem. And then, you know, this weakness, people are unhappy, creates a toxic working environment*". *The migration of skilled nurses has been particularly impactful. According to Nursing and Midwifery Council of Botswana (MCB), approximately nurses apply to leave the country every week, with many being master's degree holders. This creates severe staffing shortages, particularly in underserved and rural areas.*

Participant 11 further reiterated the loss of skilled manpower when stating that "*we've been losing other professionals, like the nursing professionals to other countries due to the issue of salaries, better salaries , looking for greener pastures".*

Particpants recommended drawing from international best practices, such as Ethiopia's approach which includes financial and nonfinancial incentives as well as career progression opportunities, to help retain health workers in difficult to reach areas. Another major issue raised was employee welfare and unresolved grievances. Particpants pointed out that personnel felt ignored or mishandled by the system, with some resorting to court action to resolve work related disputes. The lack of timely resolution and mechanisms has contributed to low morale and frustration.

Participant 4: *"I'm going to be nice and say 85% of the health care workforce are disgruntled. There's no regulation, optimum regulation because of HR issues. So, issues are not properly handled unless in a court of law and not everyone can go to court".*

In addition to human resource challenges, participants cited inadequate resources and equipment in health facilities as a major demotivating factor. The resource shortage hinders the ability to perform optimally, further compounding dissatisfaction and attrition.

Participant 20: "*Not looking into the issues of welfare especially in ensuring that there is availability of equipment in the health facilities, and they are fully functional always so that they can perform their duties effectively to their clients hence these personnel they get frustrated and leave the country*".

Lack of Motivation and Career Progression

An important theme that emerged from the participants was the lack of motivation and limited opportunities for career progression within the health sector. Several health workers expressed dissatisfaction regarding the prolonged stagnation on the salary scale, even after undergoing training or obtaining higher qualifications.

Participant 4: *"If you don't have posts, how are you going to fill up vacancies or fill up facilities anywhere? Most people, when they come back, they resume their duty where they were before going for training. And then some are disgruntled, obviously, because after training, you expect your life to change or to improve. Some people have come back after training and have been in that position for the past 10 years". This may lead to em*ployees becoming disgruntled.

This issue was cited as the major demotivating factor, contributing to employee dissatisfaction ultimately to health workers migration, as individuals leave in search of better working conditions and advancement opportunities.

Participant 7: *"You train nurses, the few that you have, the few midwives that you have. And next thing they go for greener pastures. Migration of nurses to greener pastures".*

Participant 16: "*we need a retention strategy. Without one, we are doomed. So we don't have. We will train, they will leave for greener pastures. And that is our biggest challenges".*

Participant 11: "*we've been losing other professionals, like the nursing professionals to*

other countries due to the issue of salaries, better salaries , looking for greener pastures".

Participants also linked poor performance and motivation to broader systematic issues such as inadequate resources, unresolved grievances, unfair distribution, which inturn exacerbate the feeling of being under valued and overworked. These insights strongly point to the need to for structured promotion pathways, equitable training opportunities, and transparent career progression frameworks to motivate and retain skilled proffessionals.

Frequent Leadership Changes and Organizational Structuring

A recurring concern raised by participants was the frequent changes in leadership with the Ministy of Health and constant restructuring, which were seen as a major draw back to continuity and sustainable progress. Participants noted that the new leadership often brought in new priorities, which resulted in on-going initiatives being discontinued or underfunded.

Participant 2: "*one of the biggest problems is that people really don't understand the aspect of policy cycle. So that they end up not doing certain things, leadership is not clear on leadership restructuring"*. This disruption of on - going leadership turnover was particularly problematic in strategic areas such as HRH planning.

Discussions

The study aimed to explore stakeholder's perspectives on the underlying factors contributing to the shortage of healthcare workers and to identify actionable recommendations they propose to address the problem. The study revealed several interrelated challenges, including; lack of reliable HRH data, ineffective recruitment and retention strategies, poor staff motivation and career progression as well as frequent leadership changes within the Ministry of Health. A significant concern identified was the internal and external migration of healthcare workers, particularly nurses, in search for better opportunities leaving the local health system understaffed. This migration has left the local health system severely understaffed, a challenge also seen in other countries like the Philiphines[6]. Although Botswana has attempted to implement retention strategies, they appear insufficient as the health work force continue to migrate. To address this issue, particpants recommended that Botswana develop and implement robust, data informed retention strategies and incentive policies. For instance, Ethiopia's use of financial and non-financial incentives as well as career progression opportunities in underserved areas, offeres a model Botswana could adapt [7].

Addressing these health workforce challenges requires deliberate and strategic action by the Ministry of Health in line with WHO Global Strategy HRH: Workforce 2030 [1]. Suggested actions include: Developing a comprehensive recruitment and retention strategies tailored to different caders of healthcare workers; Strengthening leadership commitment, particularly ensuring that decisions are evidence based and aligned with long term statergic goals; equitable and needs based of training opportunities, guided by facility level data; Establishing a comprehensive HRH information system to support decisions related to workforce distribution, training needs and identifying skills gaps. Participants highlighted that the current fragmentation of the HRH information systems limits the ability to make informed decisions.

The Botswana Health Data Collaborative Roadmap (2024-2030) emphasizes the importance of harmonized and data-driven health decision-making and aligns with global digital health priorities. Botswana can also learn from other countries' best practices. Rwanda for example, is expanding specialized training through international university partnerships [8]. Malawi's task-shifting models

empowers mid-level healthcare workers to fill gaps in service delivery [9]. Additionally, the India-WHO Collaboration for Healthcare training presents another potential avenue.[10]. Botswana could explore partnerships with such international institutions to strengthen its medical education infrastructure and align with global standards [1]. Additionally, the Philippines is known for producing large numbers of nurses, but continues to experience human resource for health crisis. The contributing factor is the migration of a large number of nurses to other countries for better opportunities leaving the local health system understaffed. A challenge that Botswana is grappling with another concern expressed by the participants, was the frequent change in leadership and on going restructuring with the MOH. These shifts often disrupts ongoing initiatives, such as HRH Strategy which remains unimplemented due to lack of funding and leadership continuity. Frequent changes also impact the policy implementation and undermine the consistency of strategic plans. Particpants also called attention to the need for fair allocation of training slots, improved career progression mechanisms, and the development of incentive structures that reward retention and performance. Lack of motivation, career stagnation, and un addressed grieviences were cited as key factors driving discontent and migration among healthcare workers. The challenges identified in this study are complex but insurmountable. With a strong commitment from leadership, investments in HRH systems, and the adoption of data driven planning and retention strategies, Botswana can build a resilient and responsive health workforce. These efforts will enhance health service delivery, improve staff satisfaction, and contribute significantly to achieving both national and global health goals.

While the findings offer valuable insights into the research objectives, it is important to acknowledge the limitations that may have influenced the scope, depth and generalizability of the results. The key limitations of this was time availability, as the researcher conducted the study while managing a full time employment and part time academic commitments. These time constraints limited the scope of the data collection to Gaborone only, excluding potentially valuable insights from other districts. Additionally, scheduling interviews with senior executive within the Ministry posed challenges due to their demanding responsibility and frequent emergencies, which lead to the delayed or missing follow ups with some participants.

Conclusion

Globally, the health sector is facing shortage of healthcare personnel and Botswana is no exception. This study highlighted the urgent need for MOH to implement competitive recruitment and retention initiatives to ensure the sustainability of its health workforce. Furthermore, the importance of a comptrehensive HRH information system was emphazised as a key tool to guide evidence based decision making in planning, deployment, and training of healthcare workers . The study sheds light on the multifaceted challenges contributing to workforce shortages and offers actionable insights, that if implemented, could strengthen Botswana's health system and improved overall health outcomes.

Recommendations

Based on the study findings, stakeholders recommend that the MOH consider the following intervension:

Developing and implementing competitive recruitment and retention strategies, incorporating both financial and non-financial incentives. This includes improving the health flexible contracts (short-term and long term), housing allowances, remote area allowances, and career progression pathways to retain critical healthcare staff.

Establish a comprehensive intergrated HRH information system to harmonize existing systems. This would support effective workforce planning by providing data on staffing levels, distribution,skills gap, and performance indicators.

Invest in comprehensive human resource management system that promote efficiency in recruitment, deployment, appraisal, and succession planning.

Designing and implementing practical skills-based educational training programs including mentorship, on-site continuous professional development (CPD) and speciliality training aligned with health system needs.

Conflict of Interest

The author declares no conflict of interest.

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